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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,595	03/16/2006	Koichiro Kano	8062-1033	7278

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EXAMINER	
POPA, ILEANA	
ART UNIT	PAPER NUMBER
1633	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

Office Action Summary	Application No.	Applicant(s)	
	10/560,595	KANO, KOICHIRO	
	Examiner	Art Unit	
	ILEANA POPA	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-19,23-25 and 29-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-19, 23-25, and 29-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-14 have been cancelled. Claims 20-22, 26-28, 33, and 34 have been withdrawn. Claim 15 has been amended.

Claims 15-19, 23-25, and 29-32 are under examination.

Information Disclosure Statement

2. The IDS form of 06/25/2009 has been considered. It is noted that the first non-patent document has not been considered because Applicant did not provide an English translation of the document, nor did Applicant provide an English abstract. The remaining four non-patent documents have only been considered with respect to the translated sections provided by Applicant.

Applicant is again reminded that a proper citation of non-patent documents must include the author name. None of the non-patent document citation includes the author name.

Response to Arguments

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 15-18, 23, 24, 29, and 30 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (Bone, 1999, 24: 549-554), in view of both Lecoeur et al. (Biomaterials, 1997, 18: 989-993, Abstract) and Sugihara et al. (Differentiation, 1986, 31: 42-49).

Park et al. teach isolating, cultivating, and cloning mature adipocytes from human bone marrow; the cloned mature adipocytes are further cultured and dedifferentiated to fibroblast-like fat cells (i.e., pre-adipocytes), wherein the pre-adipocytes do not have lipid droplets and wherein the pre-adipocytes express alkaline phosphatase, i.e., an early marker of osteogenesis (see Lecoeur et al., Abstract) (claim 15); Park et al. teach further transdifferentiating their pre-adipocytes into osteoblasts (claims 18, 23, 24, and 30) (Abstract, p. 550, columns 1 and 2, p. 553, column 1, first full paragraph and column 2). Park et al. teach that obtaining dedifferentiated pre-adipocytes lacking lipid droplets useful to be used in their transdifferentiation method requires continuous trypsinization before the cells reach confluence to inhibit their differentiation by cell-cell contact (p. 550, column 2; p. 551, column 2).

Park et al. do not teach deriving their pre-adipocytes from the dedifferentiation of mature adipocytes isolated from subcutaneous fat tissue, nor do they teach ceiling culture (claims 15 and 17). However, at the time the invention was made, such was taught by the prior art. For example, Sugihara et al. teach a method of obtaining mature unilocular adipocytes from abdominal fat tissue, the method comprising chopping the tissue into small pieces, subjecting the chopped tissue to collagenase digestion followed by filtration and centrifugation, isolating the floating unilocular fat cells, followed by

subjecting the isolated unilocular fat cells to "ceiling culture" to obtain fibroblast-like pre-adipocytes (Abstract, p. 42, column 2, p. 44, column 1, second and third paragraphs, p. 45, column 1, p. 46, column 2). It would have been obvious to one of skill in the art, at the time the invention was made, to modify the method of Park et al. by using the ceiling method of Sugihara et al. to achieve the predictable result of obtaining pre-adipocytes suitable to be used in a transdifferentiating method.

Claims 16 and 29 recite that the pre-adipocyte cell line is FERM BP-0864, wherein FERM BP-0864 cell line is obtained by the method of Sugihara et al. (see the instant specification, p. 8, 22, and 23). It is noted that Applicant did not provide any evidence that FERM BP-0864 cell line has unique properties as compared to other cell lines obtained by using a method according to the combined teachings of Park et al. and Sugihara et al. Absent evidence of unexpected results, it is generally not inventive to use the FERM BP-0864 cell line versus similar cell lines obtained by using the same method.

Thus, the claimed invention was *prima facie* obvious at the time the invention was made.

Applicant argues that the Official action recognized that PARK fails to teach deriving pre-adipocytes from the dedifferentiation of mature adipocytes isolated from subcutaneous fat tissue, nor do they teach ceiling culture.

Applicant argues that SUGIHARA fails to remedy PARK's deficiencies of PARK. SUGIHARA discloses that after unilocular adipocytes (mature adipocytes) are subjected

to ceiling culture, the unilocular adipocytes (mature adipocytes) are morphologically changed to (i) multilocular adipocytes having many small lipid droplets in their cytoplasms or (ii) fibroblast-like adipocytes having minute lipid droplets in their cytoplasms. However, SUGIHARA requires establishing a long-term culture system of adipocytes as each of the adipocytes maintains its specific functions as adipocytes. As described above, SUGIHARA has only disclosed a system capable of culturing adipocytes over the long term in a state where the functions of the adipocytes are maintained. Thus, the preadipocytes of the claimed invention would have been difficult to be provided by SUGIHARA's method. In fact, SUGIHARA fails to suggest that

When the International Application of the present National Stage Application was filed, there was no suggestion that a preadipocyte could be obtained from a terminally differentiated adipocyte by continuing the culturing of adipocyte. Even today, the data supporting the claimed invention (as described in the originally filed International Application) is unique. Papers presenting main data for the idea passed peer review in November, Docket No. 8062-1033 2009 and will be published in Journal of Cellular Biochemistry (see the appendix).

In the method of SUGIHARA, unilocular adipocytes are subjected to ceiling culture, and the culturing of the unilocular adipocytes is further continued in a manner in which the cell adhesion surface is the bottom surface. However, SUGIHARA fail to clearly disclose "continuing culturing of cells in a form of a fibroblast having no lipid droplets at all in a manner in which a cell adhesion surface is a bottom surface after a

stage where a large number of the cells are observed", as recited in the amended claim 15.

SUGIHARA further fails to disclose that after obtaining fibroblast-like adipocytes having no lipid droplets in their cytoplasms, the fibroblast-like adipocytes are further subjected to passage culture to induce dedifferentiation, and, consequently, obtaining fibroblast-like preadipocytes, which all have no lipid droplets in their cytoplasms and have no function specific to adipocytes. The preadipocyte cell line of the claimed invention is obtained through the above-mentioned process.

In PARK as well, the cells used are contained in floating fractions obtained by subjecting bone marrow aspirates to a centrifugation treatment. However, these cells do not undergo a collagenase treatment and a filtration treatment using meshes having a pore diameter of about 250 μm after the centrifugation treatment. Thus, one of ordinary skill in the art would have presumed that, according to PARK, cells contaminated with bone marrow stromal cells or the like would be used as adipocytes.

In addition, PARK fails to prove that only adipocytes were collected and cultured, and even admits that S-V fractions were contaminated. Bone marrow stromal cells are pluripotent cells, and it is obvious that the bone marrow stromal cells are differentiated and induced to adipocytes. Therefore, one of ordinary skill in the art would have concluded that the differentiated cells obtained by PARK had originated from the contaminated bone marrow stromal cells, and hence, it would have been unobvious that adipocytes would have been used to acquire differentiation ability.

Moreover, at the time PARK was disclosed, it was outside the accepted notion that terminally differentiated adipocytes could dedifferentiate and be used at the stage of precursor cells, let alone that pluripotent cells could be acquired. There is no teaching prior to the present application indicating that pluripotent precursor cells can be acquired from terminally differentiated adipocytes. This is evidenced by the fact that the papers written by inventors have been published in multiple international journals with Peer Review since 2008, and hence, the inventors' papers are significantly unique, even at present. As a method utilizing terminally differentiated somatic cells at an early stage, this method of producing iPS cells by introducing Yamanaka factors is attracting attention at present around the globe. However, the preadipocyte cell line of the present invention is a significantly unique cell, because the cell is acquired by inducing dedifferentiation of terminally differentiated adipocytes without using the Yamanaka factors.

The foregoing indicates that the preadipocyte cell line as described in independent claim 15 cannot be acquired by the method described in SUGIHARA, and even the combination of the method described in SUGIHARA with PARK does not allow the adipocytes to be used to obtain preadipocytes.

Therefore, the proposed combination fails to render obvious independent claim 15, and, accordingly, dependent claims 16-18, 23, 24, 29, and 30, and withdrawal of the rejection is respectfully requested.

Applicant's arguments are acknowledged; however, the rejection is maintained for the following reasons:

Most of the Applicant's arguments are not new, were preciously addressed and were found unpersuasive.

Applicant's argument that the prior art did not suggest that preadipocytes could be obtained from adipocytes by continuing culturing the adipocytes is not found persuasive. Such is taught by both Park and Sugihara (see the rejection above). The papers written by the Applicant do not change this. Moreover, that Applicant published his data in international journals is not material to the patentability of the claimed invention as it does not change the fact that the prior art renders the claimed invention *prima facie* obvious.

5. Claims 15-19, 23-25, and 29-32 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. taken with both Lecoeur et al. and Sugihara et al., in further view of each Ross et al. (Science, 2000, 289: 950-953), Bennett et al. (J Biol Chem, June 7, 2002, 277: 30998-31004), and Rando et al. (J Cell Biol, 1994, 125: 1275-1287).

The teachings of Park et al., Lecoeur et al., and Sugihara et al. are applied as above for claims 15-18, 23, 24, 29, and 30.

Park et al., Lecoeur et al., and Sugihara et al. do not teach transdifferentiation to myoblasts (claims 19, 25, 31, and 32). However, at the time the invention was made, the prior art suggested that pre-adipocytes have the capability to transdifferentiate into

myocytes. For example, Ross et al. teach that adipocytes and myocytes originate from the same precursor and that signaling by Wnt10b is required for commitment to the myocyte lineage; they also teach that inhibition of Wnt10b signaling in pre-adipocytes and myoblasts induces adipogenesis (Abstract, p. 952, columns 2 and 3). Bennett et al. teach that the Wnt10b receptors are highly expressed in pre-adipocytes and that inhibition of Wnt10b signaling leads to adipogenesis (Abstract, p. 30999, column 1, first paragraph). Based on these teachings, one of skill in the art would have known that treating pre-adipocytes with a myoblast differentiation medium comprising Wnt10b would result in their transdifferentiation to myoblasts. It would have been obvious to one of skill in the art, at the time the invention was made, to modify the method of Park et al., Lecoeur et al., and Sugihara et al. by transdifferentiating their pre-adipocytes to myoblasts, with a reasonable expectation of success. The motivation to do so is provided by Rando et al., who teach that myoblasts grown *in vitro* can regenerate muscle fibers when transplantated into a subject in need of treatment (Abstract, p. 1275, column 2, p. 1276, column 1). One of skill in the art would have been expected to have a reasonable expectation of success in doing so because the art teaches that pre-adipocytes express receptors for factors necessary for myoblast lineage commitment.

Thus, the claimed invention was *prima facie* obvious at the time the invention was made.

Applicant traversed the instant rejection on the grounds that the secondary references fail to remedy the deficiencies noted above. ROSS and BENNETT prove

that the signaling of Wnt10b is important for deciding the destiny of a mouse embryo-derived preadipocyte cell line and myoblast cell line. However, Wnt10b is not additionally used for inducing differentiation of the preadipocyte of the claimed invention to a myoblast. Moreover, it would have been unexpected for one of ordinary skill in the art to categorize, in the same group, a preadipocyte cell line established by cloning a fibroblast of a fetal mouse of about 13 days old from viviparity in which an fat tissue is not yet formed at all and a preadipocyte cell line established by culturing a terminally differentiated adipocyte and inducing dedifferentiation of the adipocyte. The reasons one would not have categorized these preadipocyte cell lines in the same group follow.

A preadipocyte cell line used for inducing transdifferentiation in the claimed invention is a pluripotent precursor cell obtained by culturing a terminally differentiated adipocyte and inducing dedifferentiation of the adipocyte and is an artificially produced (pluripotent) cell. The above fact indicates that the preadipocyte cell line is an artificial cell similar to an iPS cell obtained under an artificial environment by introducing Yamanaka factors into a terminally differentiated gastric mucosal epithelium or a terminally differentiated hepatocyte, and, accordingly, the preadipocyte cell line is considered to be a novel pluripotent precursor cell. Such a cell does not exist in an organism, and, thus, such a cell is outside the cell lineage (differentiation process) from a stem cell to a differentiated cell via a precursor cell, as disclosed by ROSS and BENNETT.

It has certainly been proven that the mouse precursor cell line along the cell lineage has a pathway of differentiation to a myocyte with the addition of Wnt10b.

However, it is not always certain that a preadipocyte cell line outside the cell lineage, i.e., that of the claimed invention, follow a similar pathway, and it is not always certain that the addition of Wnt10b induces the differentiation of the preadipocyte cell line to a myocyte. In fact, in the mouse preadipocyte (in the state where no Wnt10b is added) described in ROSS and BENNETT, the expression of the MyoD gene, which is a master regulator of differentiation to a skeletal muscle, is not observed, and the addition of Wnt10b induces the expression, shifting to the lineage of differentiation to a muscle. In the present invention, expression of MyoD is observed before the induction of differentiation (FIGS. 9, 11), and hence, it is reasonably thought that the preadipocyte of the present invention must have a pathway different from that of the mouse preadipocyte described in ROSS and BENNETT.

Moreover, in the claimed invention, the differentiation of the preadipocyte to a myoblast can be induced without the addition of Wnt10b. Accordingly, the claimed invention as described in independent claim 15 and dependent claims 16-19, 23- 25, and 29-32, is not is not obvious because it is not taught by the combination of LECOEUR, SUGIHARA, and PARK and additionally, ROSS, BENNETT, and RANDO. Moreover, the inventors have revealed that during the process of obtaining the preadipocyte cell line, a group of genes having a function of inhibiting the action of Wnt is highly expressed in the step of dedifferentiation from an adipocyte (in an article under publication). The fact indicates that the system of Wnt will not be activated in the preadipocyte cell line.

Therefore, Applicant requests the withdrawal of the rejection.

Applicant's arguments are acknowledged; however, the rejection is maintained for the following reasons:

Most of the Applicant's arguments are not new, were preciously addressed and were found unpersuasive.

The argument that the preadipocyte of the present invention must have a pathway different from that of the mouse preadipocyte described in ROSS and BENNETT is not supported by any evidence. For this reason, this argument is not found persuasive. It is noted that, to support this conclusion, Applicant asserts that it is not always certain that the addition of Wnt10b induces the differentiation of the preadipocyte cell line to a myocyte; as opposed to the mouse preadipocyte described in ROSS and BENNET where the expression of the MyoD gene is not observed in the absence of Wnt10b, in the instant invention the presence of MyoD is observed before the induction of differentiation, as evidenced by Fig. 9 and 11. This is incorrect as Fig. 9 and 11 show expression of MyoD in already differentiated myoblast and not before the induction of differentiation, as Applicant argues.

With respect to Applicant's argument that Wnt will not be activated in the preadipocyte cell line, such is inherent to undifferentiated predipocytes, regardless of their source, as evidenced by the prior art teaching that signaling by Wnt induces differentiation to the myocyte lineage (i.e., the cells are not undifferentiated predipocytes anymore).

For the reasons set forth above, Applicant's arguments are not found persuasive and the rejection is maintained.

6. Claims 15-18, 23, 24, 29, and 30 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al., in view of both Lecoeur et al. and Kano et al. (JP2000-083656, Abstract).

Park et al. teach isolating, cultivating, and cloning mature adipocytes from human bone marrow; the cloned mature adipocytes are further cultured and dedifferentiated to fibroblast-like fat cells (i.e., pre-adipocytes), wherein the pre-adipocytes do not have lipid droplets and wherein the pre-adipocytes express alkaline phosphatase, i.e., an early marker of osteogenesis (see Lecoeur et al., Abstract) (claim 15); Park et al. teach further transdifferentiating their pre-adipocytes into osteoblasts (claims 18, 23, 24, and 30) (Abstract, p. 550, columns 1 and 2, p. 553, column 1, first full paragraph and column 2). Park et al. teach that obtaining dedifferentiated pre-adipocytes lacking lipid droplets useful to be used in their transdifferentiation method requires continuous trypsinization before the cells reach confluence to inhibit their differentiation by cell-cell contact (p. 550, column 2; p. 551, column 2).

Park et al. do not teach deriving their pre-adipocytes from the dedifferentiation of mature adipocytes isolated from subcutaneous fat tissue, nor do they teach ceiling culture (claims 15 and 17). However, at the time the invention was made, such was taught by Kano et al. It is noted that, although the Applicant only submitted an English language abstract, in his remarks filed on 06/23/2009, Applicant admits that the pre-adipocytes of the present invention are obtained in a similar way as disclosed in JP 2000-083656, and have similar characteristics as those of the cells obtained in JP 2000-083656. Therefore, Kano et al. teach a ceiling method of preparing pre-adipocytes, the

method comprising obtaining mature unilocular adipocytes from abdominal fat tissue and dedifferentiating these unilocular adipocytes to pre-adipocytes having no lipid droplets and expressing an early marker of osteoblast, myoblast, or adipocyte, as recited in claim 15. It would have been obvious to one of skill in the art, at the time the invention was made, to modify the method of Park et al. by using the ceiling method of Kano et al. to achieve the predictable result of obtaining pre-adipocytes suitable to be used in a transdifferentiating method.

Claims 16 and 29 recite that the preadipocyte cell line is FERM BP-0864. As admitted by the Applicant, the FERM BP-0864 cell line is obtained by the method of Kano et al. It is noted that Applicant did not provide any evidence that FERM BP-0864 cell line has unique properties as compared to other cell lines obtained by using a method according to the combined teachings of Park et al. and Kano et al. Absent evidence of unexpected results, it is generally not inventive to use the FERM BP-0864 cell line versus similar cell lines obtained by using the same method.

Thus, the claimed invention was *prima facie* obvious at the time the invention was made.

Applicant's arguments are the same as above. The rejection is maintained for the same reasons as above. Furthermore, he characteristics of the preadipocyte cell line as presented by Applicant, are inherent to the preadipocyte cell line taught by the combination of art cited above.

7. Claims 15-19, 23-25, and 29-32 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. taken with both Lecoeur et al. and Kano et al., in further view of each Ross et al., Bennett et al., and Rando et al.

The teachings of Park et al., Lecoeur et al., and Kano et al. are applied as above for claims 15-18, 23, 24, 29, and 30.

Park et al., Lecoeur et al., and Kano et al. do not teach transdifferentiation to myoblasts (claims 19, 25, 31, and 32). However, at the time the invention was made, the prior art suggested that pre-adipocytes have the capability to transdifferentiate into myocytes. For example, Ross et al. teach that adipocytes and myocytes originate from the same precursor and that signaling by Wnt10b is required for commitment to the myocyte lineage; they also teach that inhibition of Wnt10b signaling in pre-adipocytes and myoblasts induces adipogenesis (Abstract, p. 952, columns 2 and 3). Bennett et al. teach that the Wnt10b receptors are highly expressed in pre-adipocytes and that inhibition of Wnt10b signaling leads to adipogenesis (Abstract, p. 30999, column 1, first paragraph). Based on these teachings, one of skill in the art would have known that treating pre-adipocytes with a myoblast differentiation medium comprising Wnt10b would result in their transdifferentiation to myoblasts. It would have been obvious to one of skill in the art, at the time the invention was made, to modify the method of Park et al., Lecoeur et al., and Kano et al. by transdifferentiating their pre-adipocytes to myoblasts, with a reasonable expectation of success. The motivation to do so is provided by Rando et al., who teach that myoblasts grown *in vitro* can regenerate muscle fibers when transplantated into a subject in need of treatment (Abstract, p. 1275,

column 2, p. 1276, column 1). One of skill in the art would have been expected to have a reasonable expectation of success in doing so because the art teaches that pre-adipocytes express receptors for factors necessary for myoblast lineage commitment.

Thus, the claimed invention was *prima facie* obvious at the time the invention was made.

Applicant traversed the instant rejection on the grounds that BENETT uses 3T3-L1 preadipocytes as preadipocytes (Experimental procedures, cell culture, P. 30999, Column 1). The 3T3-L1 cell line is a cell line produced by cloning a fibroblast derived from a fetus and is completely different from the preadipocyte cell line of the present invention in derivation. Further, the 3T3-L1 cell undergoes differentiation induction into an adipocyte, but the adipocyte is different from an adipocyte collected from a living organism in characteristic, which has been proven by many researchers. Therefore, it is impossible to conclude and is not obvious that the preadipocyte cell line of according the claims 15-19, 23-25, and 29-32 undergoes differentiation induction into a myoblast, because the pathway through which the 3T3-L1 cell line is converted to a muscle cell is the pathway which is connected to Wnt. Withdrawal of the rejection is respectfully requested.

Applicant's arguments are acknowledged; however, the rejection is maintained because these arguments are not supported by any evidence. It is also noted that the

prior art teaches that all preadipocytes (i.e., regardless of their source) require Wnt to differentiate towards the myoblastic lineage.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ILEANA POPA whose telephone number is (571)272-5546. The examiner can normally be reached on 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on 571-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ileana Popa/
Primary Examiner, Art Unit 1633